Environmental Management System Procedure

for

Determining the Significant Environmental Aspects of the Activities, Products and Services of

the

U.S. Army Garrison (USAG) Baumholder

Revision # 1

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Environmental Management System Documentation of the U.S. Army Garrison (USAG) Baumholder

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Approved by: **Date:**

James E. Larsen — 20 MAR 06

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Commanding

References:

a. Executive Order 13148, Greening the Government through Environmental Leadership.
b. ISO 14001: 2004, Environmental Management Systems – Specification with Guidance for Use.

1.1 PURPOSE.

The purpose of this procedure is to provide a standard method for determining the significant environmental aspects of the activities, products and services of the U.S. Army Garrison (USAG) Baumholder as necessary for the USAG Baumholder Environmental Management System (EMS).

1.2 APPLICABILITY.

This procedure applies to all personnel within the USAG Baumholder who are involved in assessing the significance of the environmental aspects that are related to the activities, products and services of the USAG Baumholder.

1.3 DEFINITIONS

Aspect – The part of an activity, product, or service that interacts with the environment.

Impact – Any change to the environment that is caused by an environmental aspect.

Significant Aspect – Any environmental aspect that has or can have a significant environmental impact.

Internal EMS Auditor – An individual appointed by the Environmental Management System Management Representative (EMSMR) who conducts an audit of specific activities to determine whether they are in conformance with the Garrison's EMS. The auditor should be objective, impartial, and free from responsibility of the activities being audited.

Quality Assurance (QA) Representative – An individual who independently verifies that the corrective and/or preventive action was completed. The QA Representative may be one of the following: Directorate of Public Works (DPW) Environmental Management Office staff; a DPW internal auditor; the EMSMR; or a qualified person designated by the EMSMR.

2 PROCEDURE

2.1.1 Preparation of the aspect assessment – Identification of typical installation processes and associated activities, products and services

This step is only necessary, if there have been any modifications of the Garrison's activities, products or services since the last aspect assessment.

- Make a list of typical installation processes and the correlated activities, products and services, which have an environmental aspect1.
- Sort the list by grouping the typical installation processes according to the functional area in which they fall. The functional areas used in the 2004 aspect database are:

asp_FunctionalArea_l
txtFunctArea
Aircraft and Flight Operations
Community and Troop Support
Industrial Operations
Logistics
Medical and Laboratory Support
Mission Operations and Maintenance
Natural Resource Management
Public Works and Building Related Processes
Recreation Management Activities
Vehicles and Transportation

- The complete list of functional area – process – activities/products/services combinations used for the 2004 inventory can be found in Appendix A (database tables: "asp_FunctionalArea_l", "asp_FuncToProcess ", "asp_Process_l", "asp_ProcessToActivity", and "asp_Activity_l").
- If there is a need for adding additional functional areas or for removing them, this can be done by revising tables "asp_FunctionalArea_l" and "asp_FuncToProcess" of the database.
- Figure 1 shows an example for the functional area "Public Works" and the installation process "Sanitary and construction landfill operation".

[1] environmental aspect = element of an organization's activities, products or services that can interact with the environment

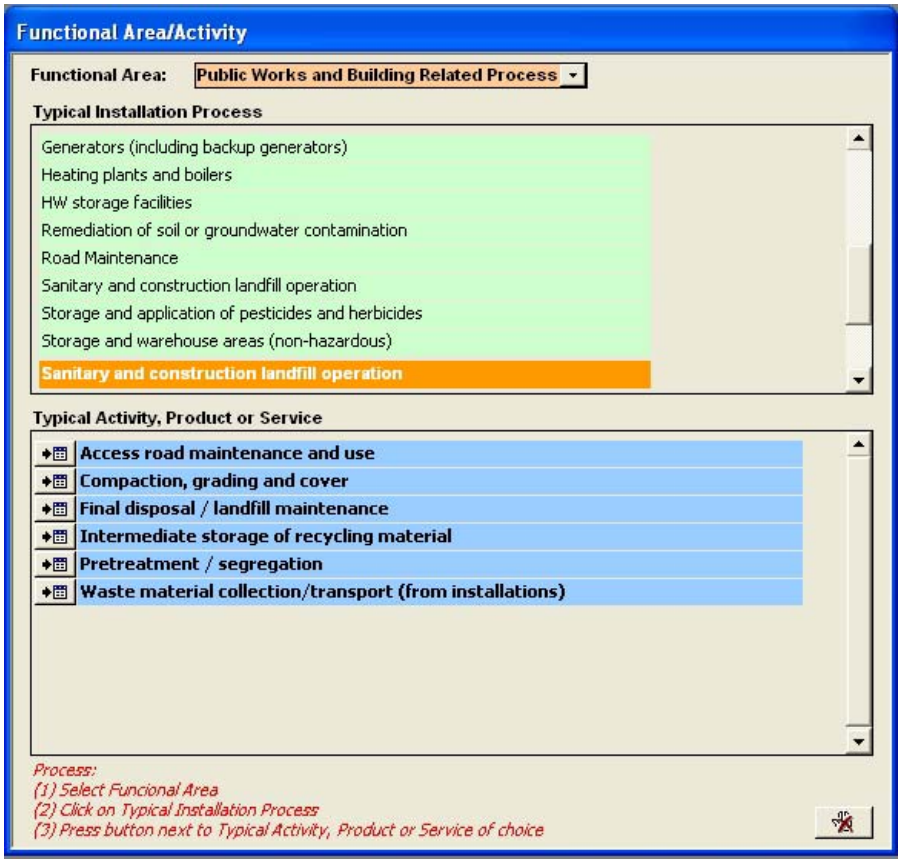


Figure 1: Example for a Functional Area – Process – Typical Activity, Product or Service Combination

2.1.2 Preparation of the aspect assessment – Identification of aspects and impacts

This step is <u>only</u> necessary, if there is a need to add additional aspects to the aspect database!

- According to ISO 14001, an environmental aspect is an "element of an organization's activities, products or services that can interact with the environment." An environmental impact is defined as "any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects."
- Generally, environmental aspects fall into one of the following aspect groups (which were used for the aspect database):

asp_AspectGrp_l
txtAspectGrp
Air emissions
Discharges to public sewer, ground or surface waters (point and non-point)
Ecological resource degradation or conservation
Energy consumption or conservation
Generation of heat, light or other radiation
Hazardous waste generation
Natural resource or raw material consumption or conservation
Noise emissions
Solid waste generation
Spills to water or soil
Uncontrolled releases, e.g. leaching

I.e. in assessing the aspect group "air emissions" one should take into account the following aspects:

asp_Aspect_l
txtAspect
Air emissions (green house gases, NOx, SOx)
Air emissions (odor)
Air emissions (ODS)
Air emissions (other organic/ inorganic chemicals)
Air emissions (PM)
Air emissions (VOC)

Only environmental aspects that can be controlled or influenced by the Garrison should be assessed. This means that the Garrison should distinguish between

a) aspects over which it has direct control (e.g. waste generation),
b) aspects it can influence (e.g. air emissions of asbestos fibers during contractor performed abatement), and
c) aspects it can neither control or influence (e.g. the Garrison cannot control dust generated from wind blowing across dirt roads – if the roads do not belong to the Garrison).

A complete list of the aspects (and the corresponding aspect groups) assessed in 2004 is included in Appendix B.

If there is a need for adding additional aspects or for removing them, this can be done by revising tables “asp_AspectGrp_l” and “asp_Aspect_l” of the database.

- Every environmental impact links to an aspect. This means there is a cause and effect relationship between aspects and impacts (e.g. the aspect “air emissions (VOC – volatile organic chemicals)” causes the impact “air quality deterioration”). The complete list of aspect – impact relationships used for the 2004 assessment can be found in Appendix C. For adding additional relations or for removing some, use the database tables “asp_Aspect_l,” “asp_Impact_l” and “asp_AspectToImpact.”

2.2 Conducting the aspect assessment

2.2.1 General Rules

- Use the aspect database for conducting the assessment.
- For effectively conducting the assessment, clearly split the work amongst a group of 4-6 persons (hereafter referred to as 'assessors') familiar with the activities, products and services of the Garrison. This can either be accomplished by assigning processes/activities or by assigning aspect groups/aspects to each assessor.
- Keep in mind that every assessment is more or less subjective. Try to avoid inconsistencies by agreeing within the group of assessors on the relative scale used for assessing the aspects.

  Example:

  You want to score the environmental risk for the following aspects, considering the potential impacts these aspects had, are having or may have on the environment. The scale is 1-5, 1 representing low risk and 5 representing high risk.

  a) Which score would you give to the aspect *energy consumption* of a library in comparison to the *energy consumption* of a simulation-based training center?

  Since the library uses a small amount of electricity and only during the day, you give the aspect *energy consumption* a score of 2 (Probability=5, Severity=1) for environmental risk. When comparing the library to the simulation-based training center that uses a much greater amount of power and 24-hours a day, you give the aspect *energy consumption* at the training center a score of 5 (Probability=5, Severity=2) for environmental risk.

  b) On the same scale, which score would you give to the aspect *hazardous waste generation (waste oil)* of a motor pool?

  The motor pool generates waste oil on a daily basis, though in small quantities. Spills are not evident during the evaluation, but you know from past experience that small spills have occurred. You give the aspect *hazardous waste generation (waste oil)* a score of 5 (Probability=5, Severity=2) for environmental risk.

  Now compare the risk value for waste oil generation with energy consumption at the library and training center. Do you think the environmental risk for energy consumption at the training center and waste oil generation at the motor pool should have the same environmental risk?

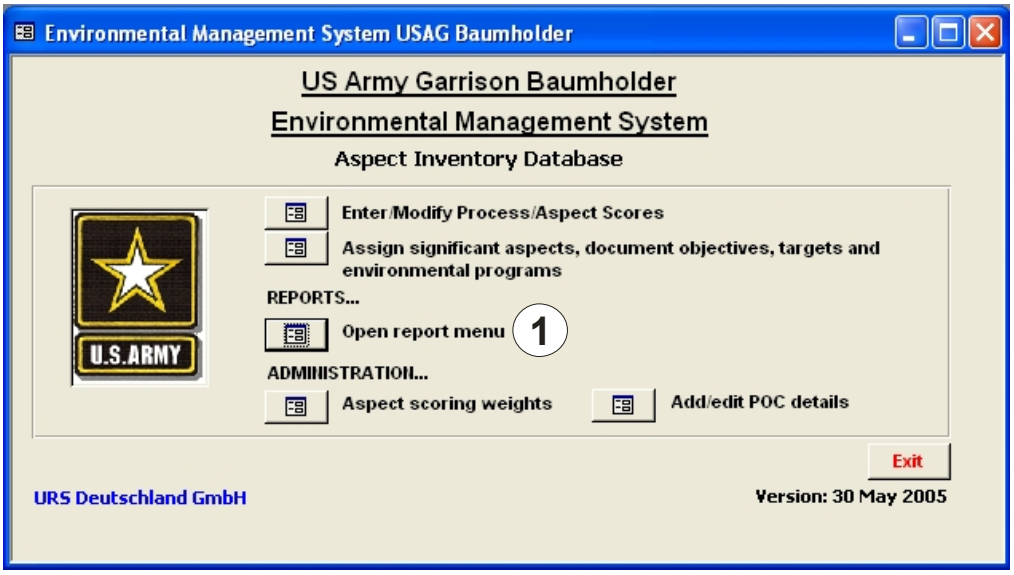
  If you would like to change your answer to question a) after having answered question b), it is because you recognized that the relative scale you first used is not appropriate for assessing aspects that are as different as *energy consumption* and *hazardous waste generation*. To avoid inconsistencies of the assessment, discuss the scale to use within the group of assessors before starting the assessment.
- Try to collect as much (quantitative) information on a process/activity as possible, before evaluating its related aspects.
- Communicate the information collected on a certain process/activity, and overall data for a specific area (e.g. wastewater discharge) to all assessors that could need the information for their assessment.

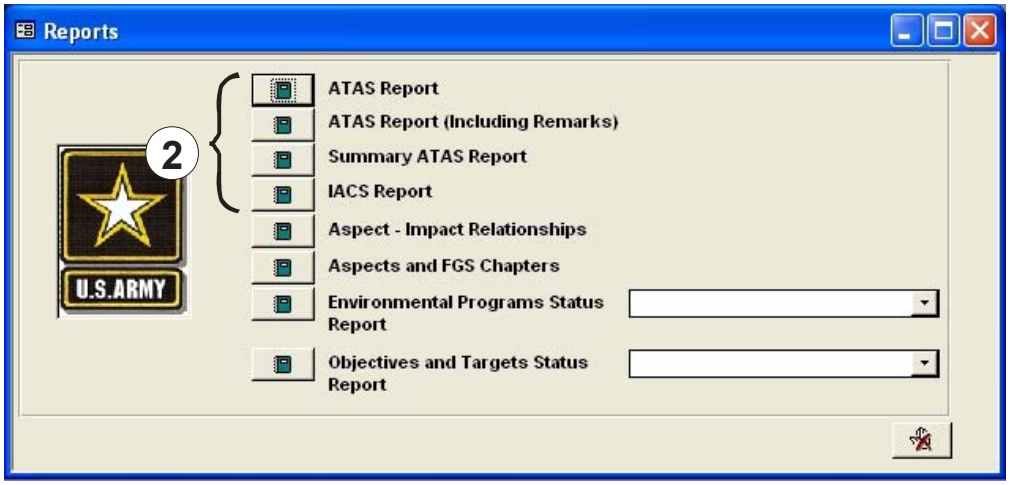
- Keep in mind that the more measurable data is available to the assessors, the less subjective the assessment will be. Consequently, it will be easier to come to an agreement on the significant aspects.
- The assessment shall be based on interviews, review of documents (e.g. Environmental Compliance Assessment Report - ECAR, SOPs, etc), records (e.g. incident records, consumption or disposal statistics, etc), and site visits (with special attention to implemented procedures, awareness of the personnel and other evidence of potential environmental risk).
- The assessment team needs to decide on the sites that shall be visited. Visit those sites that are of great importance for the products, activities and services, which you are going to evaluate. If there is more than one facility where a specific process-activity-aspect combination (PAA combination) is performed, try to get a feeling on what would be an average site of this type, by visiting more than one site.
- Document which sites/facilities where visited.
- Evaluate the aspects by filling in the database.
- When scoring an aspect, make sure you are aware of the impacts that are implied in this aspect, because the aspect evaluation is based on the severity of its impacts.

2.2.2 Entering data into the aspect assessment database

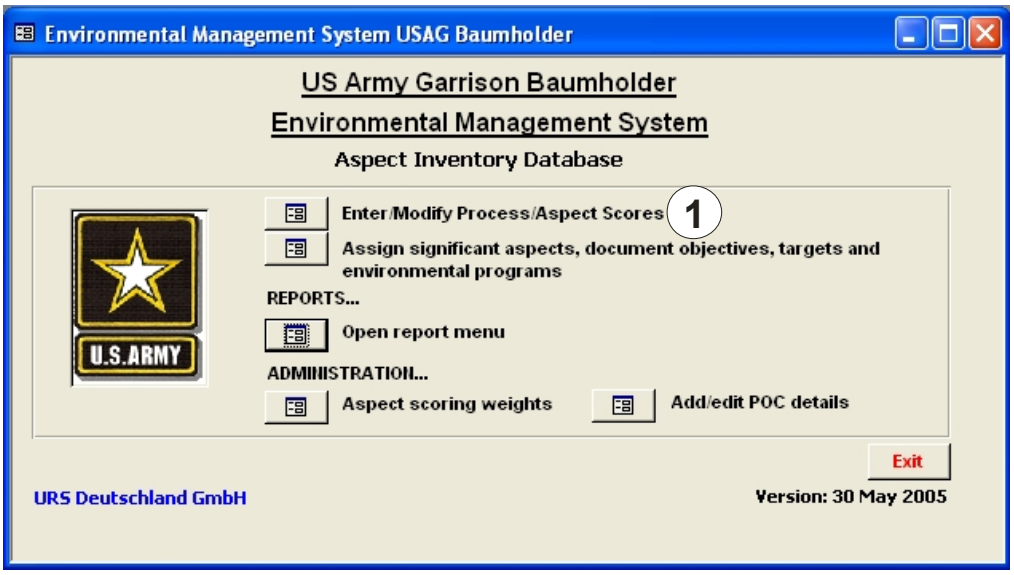
Note: As the aspect database is of a generic character, not all functional areas, processes/activities, products and services apply to each of the different Garrisons (e.g. the functional area "Aircraft and Flight Operations" applies for Wiesbaden and Hanau, but not for Baumholder). Therefore, it is alright if not all process-aspect combinations provided in the database are used for the assessment. Use only those combinations that are relevant for the respective Garrison's installations.

- When re-assessing aspects, never work in the original database of the last assessment, but use a copy and give the copy a name that includes the date of the re-assessment.
- When re-assessing existing data, it is recommended to use a printout of the list of results of the last assessment as a basis. There are different result lists available in the reports menu (①). Select the appropriate one (②). The Average Total Aspect Scores (ATAS) Report is sorted by aspect, the Individual Aspect Combination Scores (IACS) Report by functional area and activities/services/products). For more information on IACS and ATAS see Section 2.3.



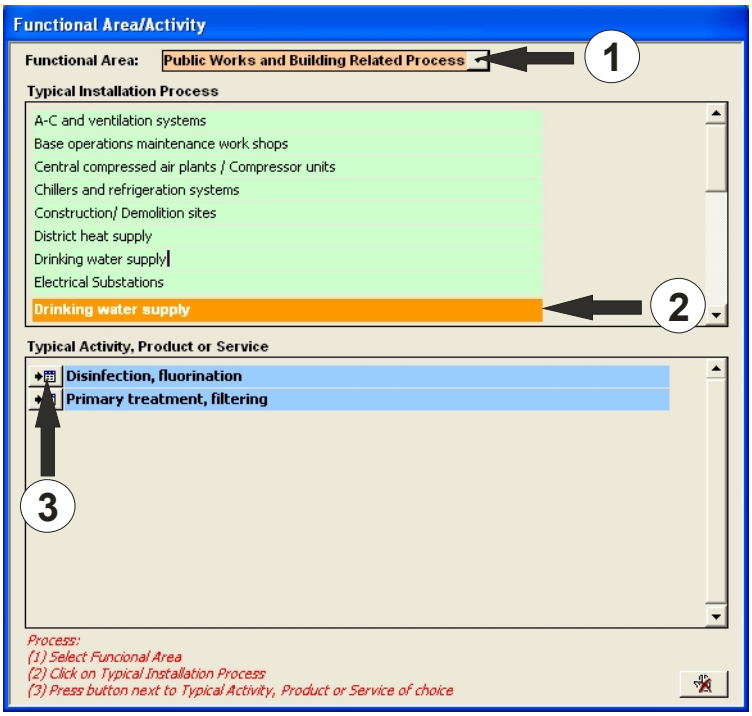


- If it is intended not to re-assess all data, decide on the specific processes or aspects to be re-evaluated. Document the selection made.
- Enter the assessment data directly into the database, or first write down the scores manually and type it in afterwards – whichever is the easiest and especially considering if there is more than one assessor.
- For typing in new data into the database follow these steps:
    a) Open the Functional Area/Activity Window (①)



b) Functional Area/Activity Window

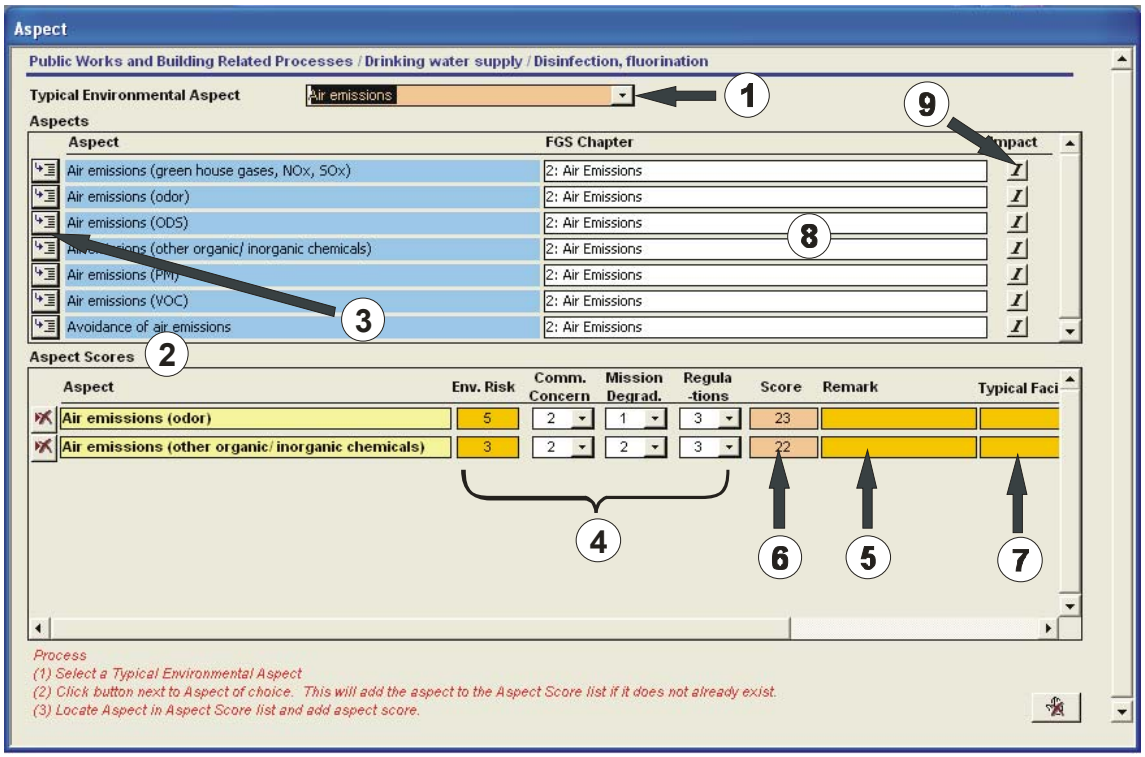
①Choose the functional area
②Choose the typical installation process
③Choose the typical activity, product or service



By doing so, one comes to the

c) Aspect Evaluation Window

- Choose the aspect group ①
- Add the aspect you want to evaluate to the "Aspect Score Window" ② by clicking on it ③
- Evaluate the significance of the aspect by giving the four aspect criteria **environmental risk, community concern, potential mission degradation and regulatory status** ④ a numerical value between 1 (lowest) and 5 (highest). Add a remark ⑤, if necessary to explain your ranking (mainly for high ranks). See Appendices D - G for further details on the evaluation scheme.
- The overall score ⑥ will then be calculated automatically using the algorithm specified in Section 2.3.
- If you want to note down, which facilities/buildings were visited for the assessment, use the "typical facilities" field (⑦)
- Field ⑧ gives you a link to the FGS chapter an aspect is related to, as far as FGS apply. Clicking ⑨ shows you the impacts related to the assessed aspect.



Note: The ranking criteria and ranking procedure stay the same, whether you evaluate positive (e.g. resource conservation) or negative (e.g. air emissions (VOC)) aspects!

2.2.3 Quality Control

Perform on-going quality assurance/quality control during the on-site assessment and data compilation using aspect inventory protocols, photographs and other types of documentation.

When having finished the data entry into the database, go through the result reports (ATAS, IACS) and check for inconsistencies. Inconsistencies could result from mistyping, or if assessors did not come to an agreement on the scales to use (see Section 2.1.1).

Correct obvious mistakes directly, and discuss unclear cases within the group of assessors. Document agreements made. See below for examples:

Example 1 *– Inconsistency:*

ENERGY CONSUMPTION (ELECTRICAL ENERGY)	Environmental Risk Probability	Severity	Risk	Comm. Concern	Mission Degred.	Regula-tions	Score
A-C and ventilation systems: A-C and ventilation systems	5	1	2	1	2	5 (1)	10
Central compressed air plants / Compressor units: Central compressed air plants / Compressor units	5	1	2	1	1	5 (1)	9
Chillers and refrigeration systems: Chillers and refrigeration systems	5	4	5	1	1	5 (1)	12
General building related pocesses (e.g. public, admin and maintenance facilities): Administration	5	1	2	1	1	5 (1)	9
Housing/billeting operations: Household activities (kitchen, bathroom, TV etc)	5	1	2	1	1	5 (1)	9
						Aspect Score Average:	9,8

Corrected:

ENERGY CONSUMPTION (ELECTRICAL ENERGY)	Environmental Risk Probability	Severity	Risk	Comm. Concern	Mission Degred.	Regula-tions	Score
A-C and ventilation systems: A-C and ventilation systems	5	1	2	1	2	5 (1)	10
Central compressed air plants / Compressor units: Central compressed air plants / Compressor units	5	1	2	1	1	5 (1)	9
Chillers and refrigeration systems: Chillers and refrigeration systems	5	1	2	1	1	5 (1)	9
General building related pocesses (e.g. public, admin and maintenance facilities): Administration	5	1	2	1	1	5 (1)	9
Housing/billeting operations: Household activities (kitchen, bathroom, TV etc)	5	1	2	1	1	5 (1)	9
						Aspect Score Average:	9,2

Example 2 *– Mistake*

REDUCTION OF DISCHARGES	Environmental Risk Probability	Severity	Risk	Comm. Concern	Mission Degred.	Regula-tions	Score
Heavy vehicle washing operations: Tracked vehicle wash rack operations	5	1	2	1	1	5 (1)	9
Stormwater handling: Stormwater retention	5	1	2	1	1	15 (3)	19
						Aspect Score Average:	14

Corrected:

REDUCTION OF DISCHARGES	Environmental Risk Probability	Severity	Risk	Comm. Concern	Mission Degred.	Regula-tions	Score
Heavy vehicle washing operations: Tracked vehicle wash rack operations	5	1	2	1	1	5 (1)	9
Stormwater handling: Stormwater retention	5	1	2	1	1	5 (1)	9
						Aspect Score Average:	9

Example 3 *– Inconsistency:*

HAZARDOUS WASTE GENERATION (FILTERS)	Environmental Risk Probability	Severity	Risk	Comm. Concern	Mission Degred.	Regula-tions	Score
Aircraft maintenance activities: Parts inspection and replacement (not brakes, tires)	5	1	2	1	1	15 (3)	19
Autocraft shops: Parts inspection and replacement (not brakes, tires)	5	1	2	1	1	15 (3)	19
Motor pools and vehicle maintenance centers: Parts inspection and replacement (not brakes, tires)	5	1	2	1	4	15 (3)	22
Remediation of soil or groundwater contamination: Ground water remediation pump and treat facilities	3	2	3	1	1	15 (3)	20
						Aspect Score Average:	20

Corrected:

HAZARDOUS WASTE GENERATION (FILTERS)	Environmental Risk Probability	Severity	Risk	Comm. Concern	Mission Degred.	Regula-tions	Score
Aircraft maintenance activities: Parts inspection and replacement (not brakes, tires)	5	1	2	1	1	15 (3)	19
Autocraft shops: Parts inspection and replacement (not brakes, tires)	5	1	2	1	1	15 (3)	19
Motor pools and vehicle maintenance centers: Parts inspection and replacement (not brakes, tires)	5	1	2	1	1	15 (3)	19
Remediation of soil or groundwater contamination: Ground water remediation pump and treat facilities	3	2	3	1	1	15 (3)	20
						Aspect Score Average:	19,25

2.3 Ranking list of aspects and determining significant aspects

2.3.1 The algorithm given below is used to obtain an IACS for each process-activity-aspect combination (PAA combination). Appendices D – G explain the meaning of the aspect criteria and their scores.

$$\mathbf{IACS = a + b + c + 5(d)}$$

IACS = Individual Aspect Combination Score
a = "Environmental risk" score
b = "Community concern" score
c = "Potential mission degradation" score
d = "Regulatory status" score

This means that:

a) The aspect criterion "regulatory status" is given an extra weight (factor 5) due to the importance of regulatory compliance for environmental management.
b) The rest of the aspect criteria are treated equally (no weighting factors).
c) The individual aspect combination score for an aspect (in a PAA combination) is calculated by summing up the weighted aspect criterion scores.

See the following tables for example IACS.

Table 1: General example for calculating the IACS (individual aspect combination score)

Aspect criterion	**Aspect criterion score**	**Meaning of score**	**Weighted score**
Environmental risk	3	Medium environmental risk	**3**
Community concern	2	Community is unconcerned, but could easily become so	**2**
Potential mission degradation	1	No potential for mission restrictions	**1**
Regulatory status	3	Currently in compliance with no history of non-compliance	**15**
		IACS (= sum of weighted criteria scores)	**21**

Table 2: Example for minimum IACS of a regulated aspect

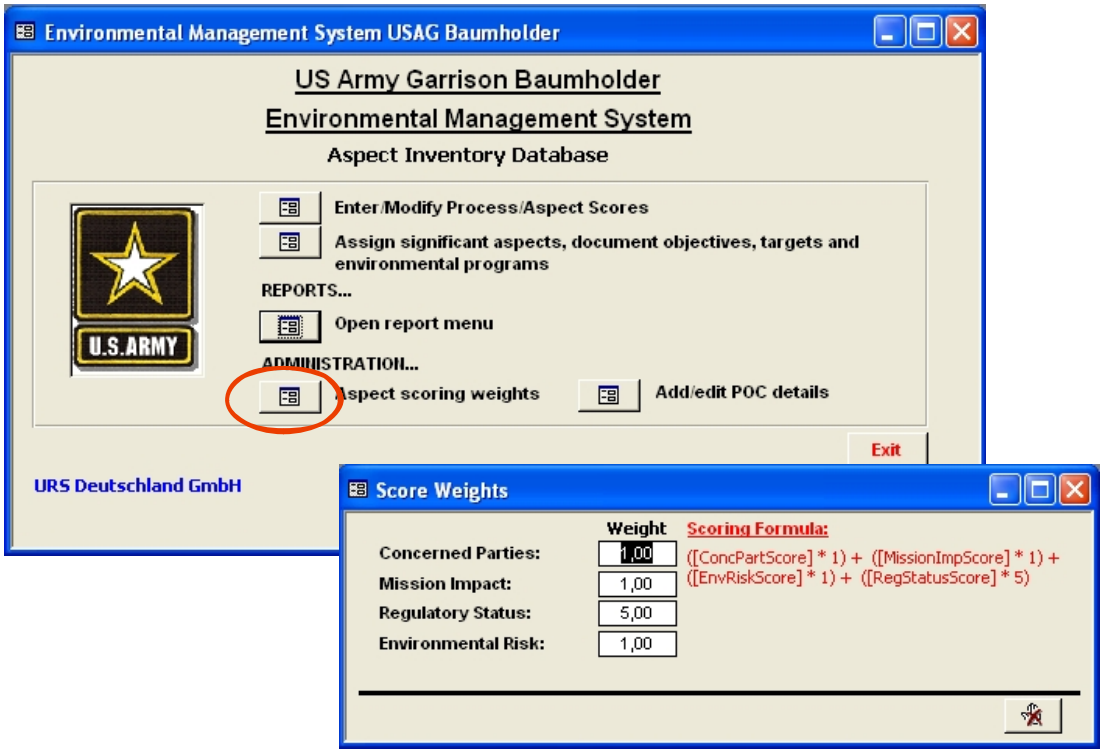
Aspect criterion	Aspect criterion score	Meaning of score	Weighted score
Environmental risk	1	Lowest environmental risk	**1**
Community concern	1	Community supports the activity or community is unconcerned by the activity	**1**
Potential mission degradation	1	No potential for mission restrictions	**1**
Regulatory status	3	Currently in compliance with no history of non-compliance	**15**
		IACS (= sum of weighted criteria scores)	**18**

Table 3: Example for maximum IACS

Aspect criterion	Aspect criterion score	Meaning of score	Weighted score
Environmental risk	5	Extremely high environmental risk	**5**
Community concern	5	Public outcry/lawsuits	**5**
Potential mission degradation	5	Loss of ability to accomplish mission	**5**
Regulatory status	5	Currently in compliance with no history of non-compliance	**25**
		IACS (= sum of weighted criteria scores)	**40**

All aspects for which legal requirements exist, will have an IACS of at least 18 (minimum scores: a=1, b=1, c=1, d=3) out of a maximum of 40 (a=5, b=5, c=5, d=5).

This step (2.3.1) is implemented in the database and will be automatically performed when the aspect criteria scores are entered. If there is a need for changing the algorithm, use "Administration -> Modify aspect scoring weights" in the start window:



2.3.2 Once all IACS were calculated, make a list of all PAA combinations and their IACS and sort the list by aspect (Remember: an aspect can appear more than once in total, but only once in combination with a specific process/activity!). Then calculate the average total aspect score (ATAS) for each aspect using:

$$\mathbf{ATAS = \Sigma IACSn / n = (IACS1 + IACS2 + \ldots + IACSn) / n}$$

ATAS = Average Total Aspect Score
IACS = Individual Aspect Combination Score
n = Number of assessed PAA combinations, in which a specific aspect occurs

This step (2.3.2) is implemented in the database and will be automatically performed when using the ATAS Report. An example for calculating an average total aspect score would be:

ENERGY CONSUMPTION (ELECTRICAL ENERGY)	Environmental Risk Probability	Severity	Risk	Comm. Concern	Mission Degred.	Regulations		Score
A-C and ventilation systems: A-C and ventilation systems	5	1	2	1	2	5	(1)	10
Central compressed air plants / Compressor units: Central compressed air plants / Compressor units	5	1	2	1	1	5	(1)	9
Chillers and refrigeration systems: Chillers and refrigeration systems	5	1	2	1	1	5	(1)	9
General building related pocesses (e.g. public, admin and maintenance facilities): Administration	5	1	2	1	1	5	(1)	9
Housing/billeting operations: Household activities (kitchen, bathroom, TV etc)	5	1	2	1	1	5	(1)	9
						Aspect Score Average:		9,2

5 IACS ⇩ 1 ATAS

2.3.3 Make a list of all aspects and their ATAS, this time, leaving out the process and activity information. Sort this list by descending ATAS. The top 3 aspects will be selected as significant aspects by the Garrison.

This step (2.3.3) is implemented in the database and will be automatically performed when using the Summary ATAS Report.

2.3.4 As a last step, discuss the selected significant aspects within the Cross Functional Team (CFT). If it is agreed that the selected significant aspects should be pursued by the Garrison, this agreement should be documented in a memorandum or meeting minutes. If it is decided to revise the selected significant aspects (e.g. skip one of the top three significant aspects and choose the fourth ranked aspect as a significant aspect or to choose a fourth additional significant aspect), this decision must also be documented in a memorandum or meeting minutes. This memorandum or meeting minutes will be part of the Garrison's EMS documentation and, therefore, is a controlled document that is to be maintained in the EMS document control system database. Revisions in the selected significant aspects must be justified.

Deviation from the calculated order of significant aspects could e.g. be allowed if all feasible measures have been instituted to minimize or eliminate past, current and future impacts for the particular aspect.

For example:

The Garrison has ranked the following aspects from high to low:

1. Solid Waste Disposal
2. Air Emissions (ODS – ozone depleting substances)
3. Spills and Leaks (POL – petroleum, oils and lubricants)
4. Hazardous Waste Generation (POL)
5. Hazardous Waste Generation (medical, infectious)

According to Garrison's procedures, the top three would be considered significant aspects.

The aspect solid waste disposal (which focuses on landfill operations) was considered to have a very high environmental risk; however, the Garrison has used the most technologically advanced liners, installed a state-of-the-art leachate collection and treatment system, installed monitoring wells and conducts routine monitoring of the groundwater, etc. The Garrison has done everything within its financial capabilities and using the most state-of-the-art technology to protect the environment; however, the environmental risk is nevertheless present. In his case the Garrison could document just that and consider the next three aspects in the list.

Regarding air emissions (ODS), the Garrison was written up in a past Environmental Compliance Assessment System audit for not having a complete ODS inventory and for still having Class I ODSs in use. Therefore, during the assessment the aspect received a high score for being out of regulatory compliance in the past. However, the Garrison has now completed an inventory and has removed all Class I ODSs. Because of the past non-compliance, it ranked number two in the aspect ranking. Since the issues of non-compliance have been mitigated and the remaining ODSs are within compliance, the Garrison could justify not identifying this aspect as a significant aspect.

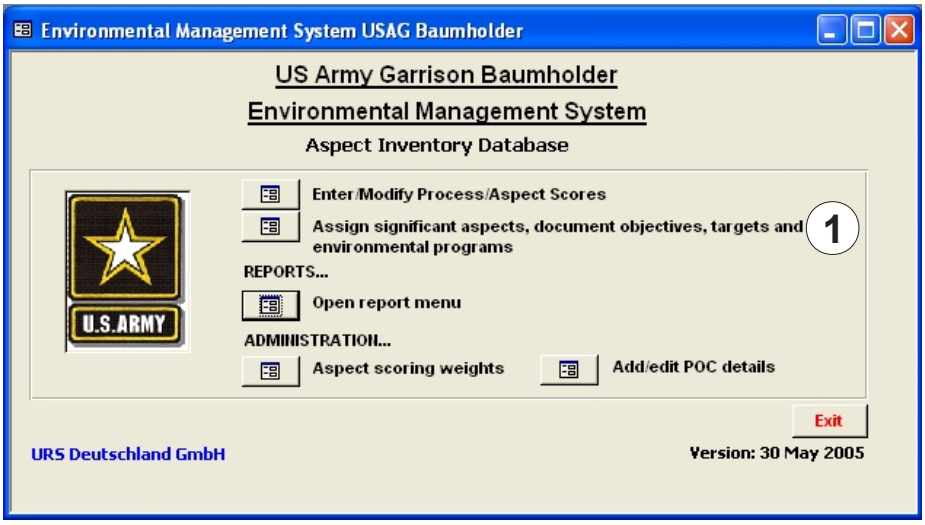
In the end, the Garrison takes the aspects ranked 3-5 as its significant aspects.

2.4 Additional databases feature: Assigning objectives and targets to significant aspects

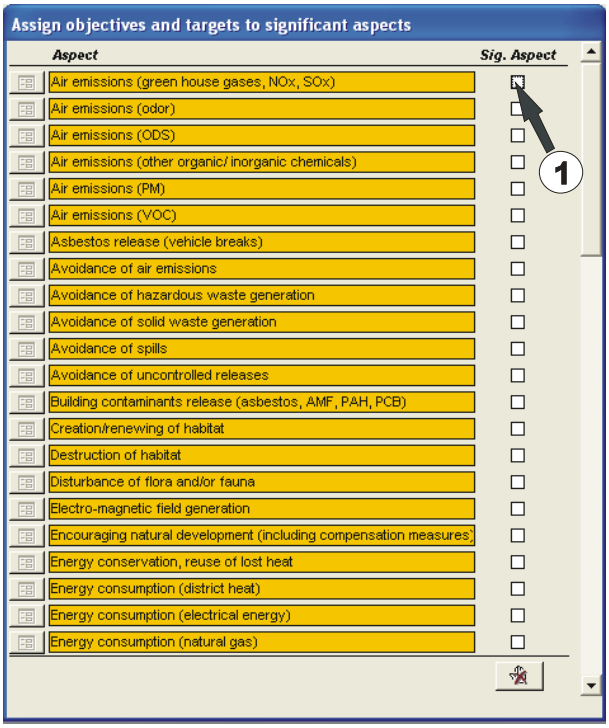
Note: With step 2.3 the aspect assessment is finished. Section 2.4 describes additional features of the aspect assessment database that can be used to assign objectives and targets to the significant aspects.

Before you can assign objectives and targets to significant aspects, you have to open and close the "Summary ATAS Report" once.

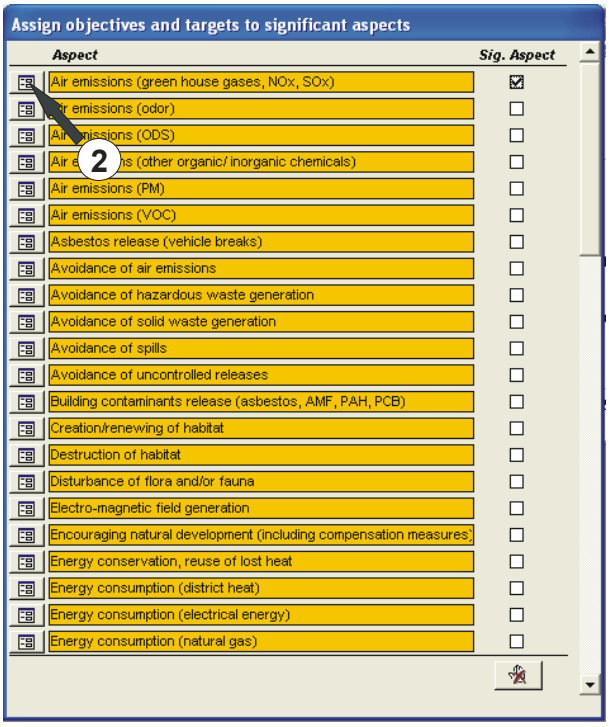
Then go to the start menu of the aspect assessment database (see figure below). Click ① to open the "Assign objectives and targets to significant aspects" window.



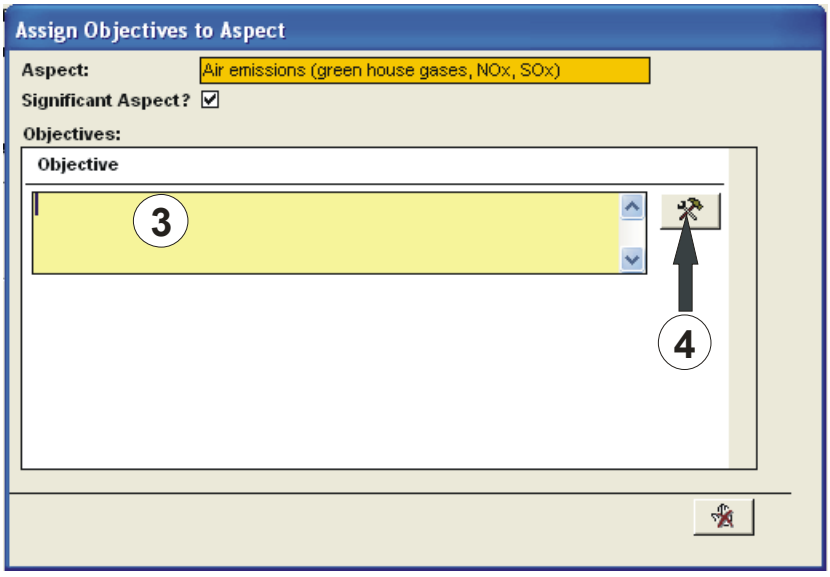
In the “Assign objectives and targets to significant aspects” window all aspects are displayed. To assign objectives and targets to a significant aspect, check the box next to the respective aspect (①):

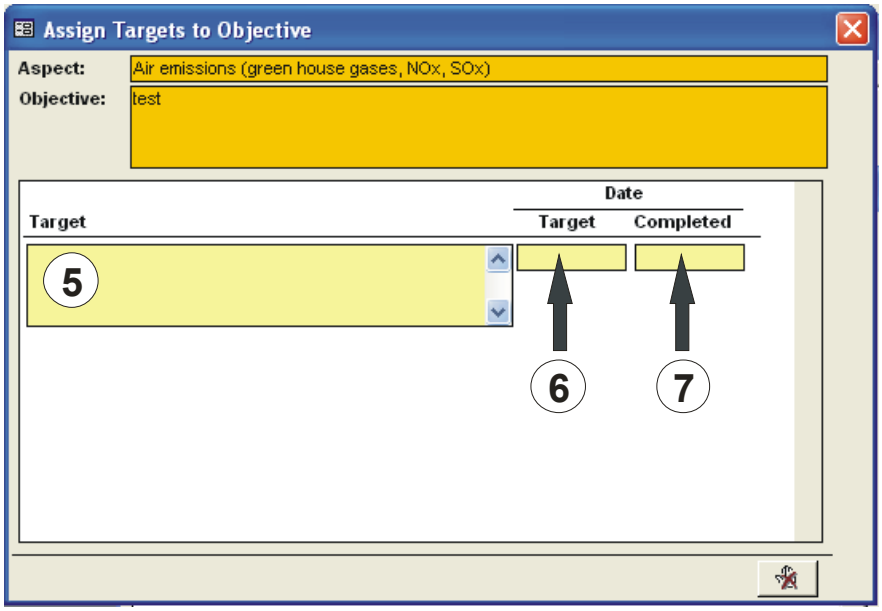


The appearance of the “Assign objectives and targets to significant aspects window” will then change to:



Select ② to open the "Assign Objectives to Aspect Window". Type an objective into ③. As soon as you start typing in the first objective, a new field for typing in another objective will pop up. I.e. you can assign more than one objective to a significant aspect. Select ④ to open the "Assign Targets to Objective Window".





Type a target into ⑤ and set a date for accomplishing this target in field ⑥. As soon as you start typing in the first target, a new field for typing in another target will pop up. I.e. you can assign more than one target to an objective.

Close all windows when you have finished assigning objectives and targets.

To display or print out the complete list of significant aspects for which objectives and targets were set, use the "Objectives and targets status report", which you can access via the start menu of the database.

Once a target has been reached accomplish its entry in the "Assign Targets to Objective Window" by typing in the completion date into ⑦.

The following examples of objectives and targets are from the U.S. Army Environmental Management System Implementers Guide, Volume 2.0, dated October 2004.

Objective	Target
Reduce solid waste disposal	Divert 40% of solid waste from landfilling
Reduce hazardous waste (HW) disposal	Reduce HW disposal by 20% from FY02
Reduce visible emissions from power plant	Reduce visible emissions 60% by 1QFY03
Reduce energy consumption	Reduce electricity use by 10% from FY02
Improve employee environmental awareness	Conduct awareness training for all employees by the end of FY03

LIST OF APPENDICES

Appendix A	Functional Area – Process – Activities/Products/Services Relationships Used for the 2004 Assessment	A-1
Appendix B	Aspect Groups and Aspects Used for the 2004 Assessment	B-1
Appendix C	Aspect – Impact Relationships Used for the 2004 Assessment	C-1
Appendix D	Aspect Criteria Definition – Environmental Risk	D-1
Appendix E	Aspect Criteria Definition – Community Concern	E-1
Appendix F	Aspect Criteria Definition – Potential Mission Degradation	F-1
Appendix G	Aspect Criteria Definition – Regulatory Status	G-1

APPENDIX A

Functional Area – Process – Activities/Products/Services Relationships Used for the 2004 Assessment

Appendix A

Functional Area – Process – Activities/Products/Services Relationships Used for the 2004 Assessment

Functional Area	Process	Activity
Aircraft and Flight Operations	Aircraft maintenance activities	Aircraft testing and check flights
Aircraft and Flight Operations	Aircraft maintenance activities	Aircraft washing
Aircraft and Flight Operations	De-icing material application	Spraying De-icer
Aircraft and Flight Operations	Helicopter pad operations	Refueling aircraft
Community and Troop Support	Communication	Communication facilities (e.g. antennas, radio stations)
Community and Troop Support	Dining facilities	Cleaning (dishes, equipment)
Community and Troop Support	Dining facilities	Preparing meals
Community and Troop Support	Dining facilities	Serving meals (dining area)
Community and Troop Support	Educational activities	Educational activities
Community and Troop Support	Fire station	Fire extinguisher maintenance and refilling
Community and Troop Support	Fire station	Fire fighting and spill control operations
Community and Troop Support	Housing/billeting operations	Household activities (kitchen, bathroom, TV etc)
Community and Troop Support	Post exchange, commissary, and other shops	Barber and beauty shops
Community and Troop Support	Post exchange, commissary, and other shops	Laundry
Community and Troop Support	Post exchange, commissary, and other shops	Retail sales
Industrial Operations	Base operations maintenance work shops	Electrical workshop
Industrial Operations	Base operations maintenance work shops	Metal processing
Industrial Operations	Base operations maintenance work shops	Painting activities
Industrial Operations	Base operations maintenance work shops	Printing (signs etc.)
Industrial Operations	Base operations maintenance work shops	Welding / soldering
Industrial Operations	Base operations maintenance work shops	Woodwork, carpentry
Industrial Operations	Scrap yard	Scrap car disposal
Industrial Operations	Scrap yard	Scrap car storage
Industrial Operations	Scrap yard	Scrap car stripping
Logistics	Bulk fueling stations and transfer	Bulk storage and associated piping (e.g. Class III Yards)
Logistics	Bulk fueling stations and transfer	Transfer to trucks / fuelling

Appendix A

Functional Area – Process – Activities/Products/Services Relationships Used for the 2004 Assessment

Functional Area	Process	Activity
Logistics	Central HM storage facilities	Hazardous material distribution or dispensing
Logistics	Central HM storage facilities	Storage of HM
Logistics	Railway loading head / Bulk storage (fuel, other HM)	Fuel downloading railway head / Bulk storage
Logistics	Railway loading head / Bulk storage (fuel, other HM)	Rail tank car loading / unloading racks (Fuel, other HM)
Logistics	Vehicle fueling stations (tactical vehicles and POV)	Fuel dispensing
Logistics	Vehicle fueling stations (tactical vehicles and POV)	Storage and filling/emptying of fuel (e.g. JP8, MOGAS tanks)
Medical and Laboratory Support	Hospital, pharmacy, and other medical activities	Anesthetic use
Medical and Laboratory Support	Hospital, pharmacy, and other medical activities	Housekeeping
Medical and Laboratory Support	Hospital, pharmacy, and other medical activities	Patient care
Medical and Laboratory Support	Hospital, pharmacy, and other medical activities	Pharmacy
Medical and Laboratory Support	Hospital, pharmacy, and other medical activities	Sterilization and disinfection
Medical and Laboratory Support	Hospital, pharmacy, and other medical activities	Storage of HM
Medical and Laboratory Support	Hospital, pharmacy, and other medical activities	Storage of HW
Medical and Laboratory Support	Laboratories and research areas	Chemical Analyses
Medical and Laboratory Support	Laboratories and research areas	Remediation of contaminated sites (soil, soil vapor)
Medical and Laboratory Support	Pathology / mortuary services	Pathology / mortuary services
Medical and Laboratory Support	X-ray inspection (film development)	Wet film developing
Medical and Laboratory Support	X-ray inspection (film development)	X-ray or MRI Imaging
Mission Operations/Maintenance and Military Training	Ammunition storage	Ammunition storage
Mission Operations/Maintenance and Military Training	Fuel Management (off base)	Cleaning / maintenance (OWS and coalescence separators)
Mission Operations/Maintenance and Military Training	Fuel Management (off base)	Fuel dispensing
Mission Operations/Maintenance and Military Training	Fuel Management (off base)	Fuel receiving and storage
Mission Operations/Maintenance and Military Training	Fuel Management (off base)	Fuel transport

Appendix A

Functional Area – Process – Activities/Products/Services Relationships Used for the 2004 Assessment

Functional Area	Process	Activity
Mission Operations/Maintenance and Military Training	Range/training operations	Range / training operations
Mission Operations/Maintenance and Military Training	Runway/flight line operations	Aircraft operations
Mission Operations/Maintenance and Military Training	Runway/flight line operations	Refueling aircraft
Mission Operations/Maintenance and Military Training	Vehicle Storage (training area, tactical vehicles)	Vehicle storage/parking (tactical vehicles)
Mission Operations/Maintenance and Military Training	Vehicle storage/parking (e.g. hardstands, parking lots)	Vehicle storage (tactical and non-tactical vehicles)
Mission Operations/Maintenance and Military Training	Weapons cleaning and maintenance	Small arms cleaning
Natural Resource Management	Groundwater/surface water management	Maintaining nature protection areas
Natural Resource Management	Groundwater/surface water management	Maintaining surface water bodies
Natural Resource Management	Groundwater/surface water management	Maintaining water protection zones
Natural Resource Management	Wildlife management (managed hunts, trapping, poison)	Wildlife management (managed hunts, trapping, poison)
Public Works and Building Related Processes	A-C and ventilation systems	A-C and ventilation systems
Public Works and Building Related Processes	Central compressed air plants / Compressor units	Central compressed air plants / Compressor units
Public Works and Building Related Processes	Chillers and refrigeration systems	Chillers and refrigeration systems
Public Works and Building Related Processes	Construction/ Demolition sites	Building abatement
Public Works and Building Related Processes	Construction/ Demolition sites	Building construction / repair
Public Works and Building Related Processes	Construction/ Demolition sites	Grading / earthmoving
Public Works and Building Related Processes	District heat supply	District heat supply / heating operations
Public Works and Building Related Processes	Drinking water supply	Disinfection, fluorination
Public Works and Building Related Processes	Drinking water supply	Primary treatment, filtering
Public Works and Building Related Processes	Electrical Substations	Distribution and transformation of electrical energy
Public Works and Building Related Processes	General building related processes (e.g. public, admin and maintenance facilities)	Administration

Appendix A

Functional Area – Process – Activities/Products/Services Relationships Used for the 2004 Assessment

Functional Area	Process	Activity
Public Works and Building Related Processes	General building related processes (e.g. public, admin and maintenance facilities)	Maintenance/cleaning activities
Public Works and Building Related Processes	General building related processes (e.g. public, admin and maintenance facilities)	Toilettes
Public Works and Building Related Processes	Generators (including backup generators)	Generator operation
Public Works and Building Related Processes	Heating plants and boilers	Fuel (e.g. heating oil, gas) receiving and storage (including tanks)
Public Works and Building Related Processes	Heating plants and boilers	Plant/boiler/burner maintenance
Public Works and Building Related Processes	Heating plants and boilers	Plant/boiler/burner operation
Public Works and Building Related Processes	HW storage facilities	HW storage areas (HWSAs)
Public Works and Building Related Processes	Remediation of soil or groundwater contamination	Ground water remediation pump and treat facilities
Public Works and Building Related Processes	Road Maintenance	Asphalt repair or application
Public Works and Building Related Processes	Road Maintenance	Grading / earthmoving
Public Works and Building Related Processes	Road Maintenance	Line painting
Public Works and Building Related Processes	Road Maintenance	Road salt or gravel applications
Public Works and Building Related Processes	Road Maintenance	Road sweeping
Public Works and Building Related Processes	Road Maintenance	Trench excavation
Public Works and Building Related Processes	Sanitary and construction landfill operation	Access road maintenance and use
Public Works and Building Related Processes	Sanitary and construction landfill operation	Compaction, grading and cover
Public Works and Building Related Processes	Sanitary and construction landfill operation	Final disposal / landfill maintenance
Public Works and Building Related Processes	Sanitary and construction landfill operation	Intermediate storage of recycling material
Public Works and Building Related Processes	Sanitary and construction landfill operation	Pretreatment / segregation
Public Works and Building Related Processes	Sanitary and construction landfill operation	Waste material collection/transport (from installations)
Public Works and Building Related Processes	Storage and application of pesticides and herbicides	Excess pesticide disposal
Public Works and Building Related Processes	Storage and application of pesticides and herbicides	Pesticide application
Public Works and Building Related Processes	Storage and application of pesticides and herbicides	Pesticide mixing and equipment cleanup

Appendix A

Functional Area – Process – Activities/Products/Services Relationships Used for the 2004 Assessment

Functional Area	Process	Activity
Public Works and Building Related Processes	Storage and application of pesticides and herbicides	Pesticide storage
Public Works and Building Related Processes	Storage and warehouse areas (non-hazardous)	Material and equipment storage (e.g. DPW warehouse)
Public Works and Building Related Processes	Storage and warehouse areas (non-hazardous)	Receiving, storage and shipping
Public Works and Building Related Processes	Stormwater handling	Cleaning / maintenance (OWS and coalescence separators)
Public Works and Building Related Processes	Stormwater handling	Cleaning / maintenance (sand traps)
Public Works and Building Related Processes	Stormwater handling	Stormwater discharge
Public Works and Building Related Processes	Stormwater handling	Stormwater retention
Public Works and Building Related Processes	Vegetation Management	Application of fertilizers
Public Works and Building Related Processes	Vegetation Management	Habitat Conservation
Public Works and Building Related Processes	Vegetation Management	Leaf clearance (inc. blowers)
Public Works and Building Related Processes	Vegetation Management	Mowing, tree and hedge cutting
Public Works and Building Related Processes	Vegetation Management	Mulching
Public Works and Building Related Processes	Vegetation Management	Planting
Public Works and Building Related Processes	Vegetation Management	Watering / irrigation
Public Works and Building Related Processes	Vegetation Management	Weeding
Public Works and Building Related Processes	Waste Recycling	Recycling collection points and processing of recyclables
Public Works and Building Related Processes	Wastewater handling	Cleaning / maintenance (OWS and coalescence separators)
Public Works and Building Related Processes	Wastewater handling	Cleaning / maintenance (sand traps)
Public Works and Building Related Processes	Wastewater handling	Sewer operation
Public Works and Building Related Processes	Wastewater handling	Wastewater treatment plant operation (sanitary wastewater)
Recreation Management Activities	Autocraft shops	Battery management (refilling, recharging)
Recreation Management Activities	Autocraft shops	Brake and clutch maintenance
Recreation Management Activities	Autocraft shops	Painting activities
Recreation Management Activities	Autocraft shops	Parts cleaning
Recreation Management Activities	Autocraft shops	Parts inspection and replacement (not brakes, tires)

Appendix A

Functional Area – Process – Activities/Products/Services Relationships Used for the 2004 Assessment

Functional Area	Process	Activity
Recreation Management Activities	Autocraft shops	Storage of HM
Recreation Management Activities	Autocraft shops	Storage of HW (incl. waste oil, antifreeze etc)
Recreation Management Activities	Autocraft shops	Test / replace fluids (not batteries)
Recreation Management Activities	Autocraft shops	Tire repair / replacement
Recreation Management Activities	Autocraft shops	Welding / soldering
Recreation Management Activities	Golf courses	Battery charging (golf carts)
Recreation Management Activities	Golf courses	Golf cart / pesticide equipment wash facilities
Recreation Management Activities	Golf courses	Grounds maintenance (incl. mowing and irrigation)
Recreation Management Activities	Golf courses	Pesticide use
Recreation Management Activities	Hobby shop	Arts and crafts
Recreation Management Activities	Hobby shop	Photo processing
Recreation Management Activities	Other recreational activities (jogging trails, baseball fields, tennis courts, etc.)	Grounds maintenance (incl. mowing and irrigation)
Recreation Management Activities	Outdoor recreation centers (rentals), RV parks, campgrounds	Customer use of facilities
Recreation Management Activities	POV washing area	Cleaning / maintenance (OWS and coalescence separators)
Recreation Management Activities	POV washing area	Washing
Recreation Management Activities	Swimming pools	Storage of HM
Recreation Management Activities	Swimming pools	Water disinfection
Vehicles and Transportation	Fuel Management (on base, at locations other than fueling points)	Fuel dispensing
Vehicles and Transportation	Fuel Management (on base, at locations other than fueling points)	Fuel receiving and storage
Vehicles and Transportation	Fuel Management (on base, at locations other than fueling points)	Fuel transport
Vehicles and Transportation	Heavy vehicle washing operations	Cleaning / maintenance (OWS and coalescence separators)
Vehicles and Transportation	Heavy vehicle washing operations	Cleaning / maintenance (sand traps)
Vehicles and Transportation	Heavy vehicle washing operations	Tracked vehicle wash rack operations

Appendix A

Functional Area – Process – Activities/Products/Services Relationships Used for the 2004 Assessment

Functional Area	Process	Activity
Vehicles and Transportation	Light vehicle washing operations	Cleaning / maintenance (OWS and coalescence separators)
Vehicles and Transportation	Light vehicle washing operations	Washing
Vehicles and Transportation	Motor pools and vehicle maintenance centers	Battery management (refilling, recharging)
Vehicles and Transportation	Motor pools and vehicle maintenance centers	Brake and clutch maintenance
Vehicles and Transportation	Motor pools and vehicle maintenance centers	Painting activities
Vehicles and Transportation	Motor pools and vehicle maintenance centers	Parts cleaning
Vehicles and Transportation	Motor pools and vehicle maintenance centers	Parts inspection and replacement (not brakes, tires)
Vehicles and Transportation	Motor pools and vehicle maintenance centers	Storage of HM
Vehicles and Transportation	Motor pools and vehicle maintenance centers	Storage of HW (incl. waste oil, antifreeze etc)
Vehicles and Transportation	Motor pools and vehicle maintenance centers	Test / replace fluids (not batteries)
Vehicles and Transportation	Motor pools and vehicle maintenance centers	Tire repair / replacement
Vehicles and Transportation	Motor pools and vehicle maintenance centers	Welding / soldering
Vehicles and Transportation	Operation of vehicles (on pavement)	Vehicle operation (tactical and non-tactical vehicles)
Vehicles and Transportation	Vehicle storage/parking (e.g. hardstands, parking lots)	Vehicle storage (tactical and non-tactical vehicles)

APPENDIX B

Aspect Groups and Aspects Used for the 2004 Assessment

Appendix B

Aspect Groups and Aspects Used for the 2004 Assessment

Aspect Group	Aspect
Air emissions	Air emissions (green house gases, NOx, SOx)
Air emissions	Air emissions (odor)
Air emissions	Air emissions (ODS)
Air emissions	Air emissions (other organic/ inorganic chemicals)
Air emissions	Air emissions (PM)
Air emissions	Air emissions (VOC)
Air emissions	Avoidance of air emissions
Discharges to public sewer, ground or surface waters (point and non-point)	Reduction of discharges
Discharges to public sewer, ground or surface waters (point and non-point)	Stormwater discharge
Discharges to public sewer, ground or surface waters (point and non-point)	Wastewater generation (domestic)
Discharges to public sewer, ground or surface waters (point and non-point)	Wastewater generation (process wastewater)
Ecological resource degradation or conservation	Disturbance of flora and/or fauna
Ecological resource degradation or conservation	Encouraging natural development (including compensation measures)
Ecological resource degradation or conservation	Creation/renewing of habitat
Ecological resource degradation or conservation	Destruction of habitat
Ecological resource degradation or conservation	Re-vegetation
Energy consumption or conservation	Energy conservation, reuse of lost heat
Energy consumption or conservation	Energy consumption (district heat)
Energy consumption or conservation	Energy consumption (electrical energy)
Energy consumption or conservation	Energy consumption (natural gas)
Energy consumption or conservation	Energy consumption (POL)
Generation of heat, light or other radiation	Electro-magnetic field generation
Hazardous waste generation	Hazardous waste generation (batteries)
Hazardous waste generation	Hazardous waste generation (construction waste, other than asbestos)
Hazardous waste generation	Avoidance of hazardous waste generation
Hazardous waste generation	Hazardous waste generation (aerosol spray cans)
Hazardous waste generation	Hazardous waste generation (antifreeze)
Hazardous waste generation	Hazardous waste generation (asbestos)
Hazardous waste generation	Hazardous waste generation (contaminated sludge/water/soil)
Hazardous waste generation	Hazardous waste generation (filters)
Hazardous waste generation	Hazardous waste generation (fixer/ developer)
Hazardous waste generation	Hazardous waste generation (medical, infectious)
Hazardous waste generation	Hazardous waste generation (other organic/ inorganic waste)
Hazardous waste generation	Hazardous waste generation (paint cans)
Hazardous waste generation	Hazardous waste generation (POL contaminated solids)
Hazardous waste generation	Hazardous waste generation (POL)
Hazardous waste generation	Hazardous waste generation (solvents)
Hazardous waste generation	Hazardous waste recycling
Natural resource or raw material consumption or conservation	Resource conservation (other)

Appendix B

Aspect Groups and Aspects Used for the 2004 Assessment

Aspect Group	Aspect
Natural resource or raw material consumption or conservation	Resource conservation (use of recycling products, active recycling)
Natural resource or raw material consumption or conservation	Resource use (chemicals/minerals)
Natural resource or raw material consumption or conservation	Resource use (metal)
Natural resource or raw material consumption or conservation	Resource use (O2, N2, Ar, acetylene propane, gases)
Natural resource or raw material consumption or conservation	Resource use (other)
Natural resource or raw material consumption or conservation	Resource use (paper/cardboard)
Natural resource or raw material consumption or conservation	Resource use (water)
Natural resource or raw material consumption or conservation	Reuse of water / Reduction of discharges
Natural resource or raw material consumption or conservation	Use of rainwater
Noise emissions	Noise emissions
Solid waste generation	Avoidance of solid waste generation
Solid waste generation	Recycling of vehicle parts
Solid waste generation	Segregation of solid waste
Solid waste generation	Solid waste disposal
Solid waste generation	Solid waste generation (construction site waste, non-hazardous)
Solid waste generation	Solid waste generation (domestic)
Solid waste generation	Solid waste generation (medical, non-infectious)
Solid waste generation	Solid waste generation (organics)
Solid waste generation	Solid waste generation (vehicle parts)
Spills to water or soil	Avoidance of spills
Spills to water or soil	Spills and leaks (HM)
Spills to water or soil	Spills and leaks (HW)
Spills to water or soil	Spills and leaks (POL)
Spills to water or soil	Spills and leaks (wastewater)
Uncontrolled realases, e.g. leaching	Asbestos release (vehicle breaks)
Uncontrolled realases, e.g. leaching	Avoidance of uncontrolled releases
Uncontrolled realases, e.g. leaching	Building contaminants release (asbestos, AMF, PAH, PCB)

APPENDIX C

Aspect – Impact Relationships Used for the 2004 Assessment

Appendix C

Aspect – Impact Relationships Used for the 2004 Assessment

Aspect	Impact
Air emissions (green house gases, NOx, SOx)	Air quality deterioration
Air emissions (odor)	Air quality deterioration
Air emissions (ODS)	Air quality deterioration
Air emissions (other organic/ inorganic chemicals)	Air quality deterioration
Air emissions (PM)	Air quality deterioration
Air emissions (VOC)	Air quality deterioration
Asbestos release (vehicle breaks)	Air quality deterioration
Avoidance of air emissions	Air quality improvement
Avoidance of hazardous waste generation	Avoidance of depletion of land(fill) resources, or air quality deterioration
Avoidance of solid waste generation	Avoidance of depletion of land(fill) resources, or air quality deterioration
Avoidance of solid waste generation	Conservation of natural resources
Avoidance of spills	Avoidance of contamination of soil, air, surface water or groundwater
Avoidance of uncontrolled releases	Air quality improvement
Building contaminants release (asbestos, AMF, PAH, PCB)	Air quality improvement
Creation/renewing of habitat	Natural resource & habitat conservation
Destruction of habitat	Natural resource & habitat destruction
Disturbance of flora and/or fauna	Natural resource degradation
Electro-magnetic field generation	Electro-magnetic smog
Encouraging natural development (including compensation measures)	Encouraging natural development
Energy conservation, reuse of lost heat	Conservation of natural resources
Energy consumption (district heat)	Depletion of natural resources
Energy consumption (electrical energy)	Depletion of natural resources
Energy consumption (natural gas)	Depletion of natural resources
Energy consumption (POL)	Depletion of natural resources
Hazardous waste generation (aerosol spray cans)	Depletion of land(fill) resources, or air quality deterioration
Hazardous waste generation (antifreeze)	Depletion of land(fill) resources, or air quality deterioration
Hazardous waste generation (asbestos)	Depletion of land(fill) resources, or air quality deterioration
Hazardous waste generation (batteries)	Depletion of land(fill) resources, or air quality deterioration
Hazardous waste generation (construction waste, other than asbestos)	Depletion of land(fill) resources, or air quality deterioration
Hazardous waste generation (contaminated sludge/water/soil)	Depletion of land(fill) resources, or air quality deterioration
Hazardous waste generation (filters)	Depletion of land(fill) resources, or air quality deterioration
Hazardous waste generation (fixer/ developer)	Depletion of land(fill) resources, or air quality deterioration
Hazardous waste generation (medical, infectious)	Depletion of land(fill) resources, or air quality deterioration
Hazardous waste generation (other organic/ inorganic waste)	Depletion of land(fill) resources, or air quality deterioration

Appendix C

Aspect – Impact Relationships Used for the 2004 Assessment

Aspect	Impact
Hazardous waste generation (paint cans)	Depletion of land(fill) resources, or air quality deterioration
Hazardous waste generation (POL contaminated solids)	Depletion of land(fill) resources, or air quality deterioration
Hazardous waste generation (POL)	Depletion of land(fill) resources, or air quality deterioration
Hazardous waste generation (solvents)	Depletion of land(fill) resources, or air quality deterioration
Hazardous waste recycling	Avoidance of depletion of land(fill) resources, or air quality deterioration
Hazardous waste recycling	Conservation of natural resources
Noise emissions	Increased noise levels
Recycling of vehicle parts	Conservation of resources
Reduction of discharges	Reduction of potential for surface water, soil, or groundwater contamination
Resource conservation (other)	Natural resource & habitat conservation
Resource conservation (use of recycling products, active recycling)	Conservation of resources
Resource use (chemicals/minerals)	Depletion of natural resources
Resource use (metal)	Depletion of natural resources
Resource use (O2, N2, Ar, acetylene propane, gases)	Depletion of natural resources
Resource use (other)	Depletion of natural resources
Resource use (paper/cardboard)	Depletion of natural resources
Resource use (water)	Depletion of natural resources
Reuse of water / Reduction of discharges	Conservation of resources
Reuse of water / Reduction of discharges	Reduction of potential for surface water, soil, or groundwater contamination
Re-vegetation	Encouraging natural development
Segregation of solid waste	Conservation of natural resources
Solid waste disposal	Depletion of land(fill) resources and/or air quality deterioration
Solid waste generation (construction site waste, non-hazardous)	Depletion of land(fill) resources, or air quality deterioration
Solid waste generation (domestic)	Depletion of land(fill) resources, or air quality deterioration
Solid waste generation (medical, non-infectious)	Depletion of land(fill) resources, or air quality deterioration
Solid waste generation (organics)	Depletion of land(fill) resources, or air quality deterioration
Solid waste generation (vehicle parts)	Depletion of land(fill) resources, or air quality deterioration
Spills and leaks (HM)	Contamination of soil, air, surface water or groundwater
Spills and leaks (HW)	Contamination of soil, air, surface water or groundwater
Spills and leaks (POL)	Contamination of soil, air, surface water or groundwater
Spills and leaks (wastewater)	Contamination of soil, air, surface water or groundwater
Stormwater discharge	Contamination of soil and groundwater, surface water

Appendix C

Aspect – Impact Relationships Used for the 2004 Assessment

Aspect	Impact
Stormwater discharge	Depletion of land(fill) resources, or air quality deterioration
Use of rainwater	Conservation of natural resources
Wastewater generation (domestic)	Contamination of surface water, soil, or groundwater
Wastewater generation (process wastewater)	Contamination of surface water, soil, or groundwater

APPENDIX D

Aspect Criteria Definition – Environmental Risk

Appendix D

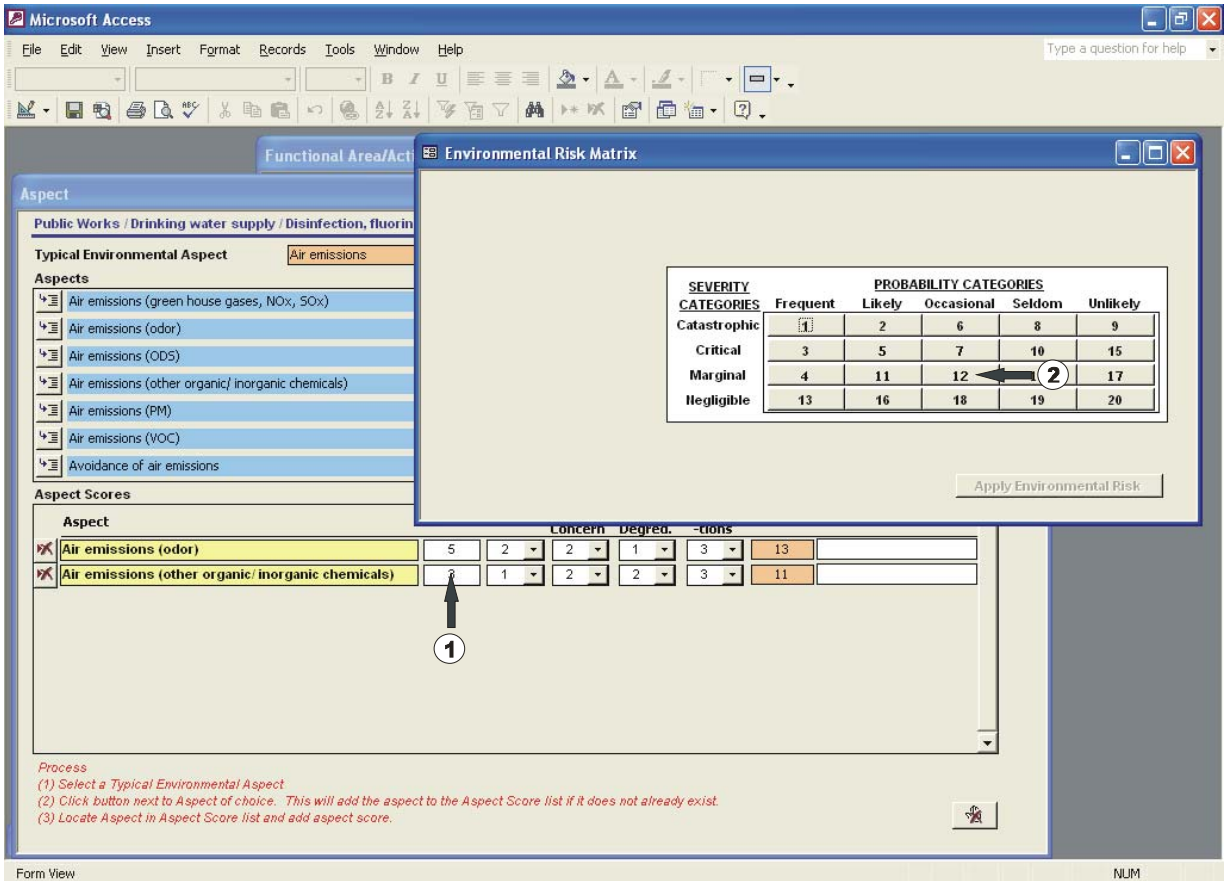
Aspect Criteria Definition – Environmental Risk

Environmental Risk

Evaluate the potential risk that the aspect poses on public health and/or the environment. The severity of the risk is dependant on the environmental impacts associated with the aspect.

Risk is hereby defined as the combination of severity of the impact (worst case scenario) and its likelihood of occurrence. Therefore, the risk assessment matrix shown below is included in the database.

Environmental Risk Assessment Matrix



Appendix D

Aspect Criteria Definition – Environmental Risk

The following definitions for the severity categories were used for the 2004 assessment:

Severity		
Severity ID	**Severity Category**	**Severity Description**
1	Negligible	Less than minor environmental degradation, loss exceeding $2K but less than $10K, injury or occupational illness not resulting in a lost work, or minimal environmental damage not violating law or regulation.
2	Marginal	Minor reversible damage to a natural environment, natural habitat, natural resource or cultural resource. Loss exceeding $10K but less than $50K, injury or minor occupational illness resulting in a lost work day, or mitigable environmental damage where restoration activities can be accomplished without violation of law or regulation.
3	Critical	Reversible damage to a natural environment, major degradation to a critical natural habitat, natural resource or cultural resource. Replacement cost exceeding $50K but less than $100,000. Permanent partial disability or severe injury or occupational illness that may result in hospitalization of at least one person. Reversible environmental damage causing a violation of law or regulation.
4	Catastrophic	Irreversible or extreme damage to a natural environment or loss of a critical natural habitat, natural resource or cultural resource. Replacement costs exceeding $100,000, death, or permanent total disability to an individual.

The following definitions for the probability categories were used for the 2004 assessment:

Probability		
Probability ID	**Probability Category**	**Probability Description**
1	Unlikely	Qualitative Definition – So unlikely you can assume it will not occur in life of the system. Quantitative Definition – Probability of occurrence is less than one in a million (never or once in a life time).
2	Seldom	Qualitative Definition – Unlikely, but could occur in the life of the system. Quantitative Definition – Probability of occurrence is less than one in a thousand but more than one in a million (once every year or two).
3	Occasional	Qualitative Definition – Will occur in the life of the system. Quantitative Definition – Probability of occurrence is less than one in a hundred but greater than one in a thousand (more than once per year, less than once per month).
4	Likely	Qualitative Definition – Occurs several times in the life of the system. Quantitative Definition – Probability of occurrence is less than one in ten but greater than one in a hundred (more than once per a month).
5	Frequent	Qualitative Definition – Occurs often in the life of the system. Quantitative Definition – Probability of occurrence is greater than one in ten (daily or ongoing).

Appendix D

Aspect Criteria Definition – Environmental Risk

After selecting the appropriate severity and probability categories by clicking the respective cell in the environmental risk matrix, the database calculates an environmental risk score (numerical value between 1 and 5), using the following risk class definitions:

Risk Assessment Matrix Cell	Environmental Risk Score	Risk Level
01 – 04	5	Extremely High
05 – 08	4	High
09 – 12	3	Medium
13 – 16	2	Low
17 – 20	1	Lowest

APPENDIX E

Aspect Criteria Definition – Community Concern

Appendix E

Aspect Criteria Definition – Community Concern

Concerned Parties

Evaluate how interested parties will probably perceive an environmental impact.

With respect to Army installations, these parties are typically residents within or in close proximity to the installation and special interest groups. The following scale was used for scoring community concern during the 2004 assessment:

Concerned Parties	
Community Concern Score	**Concern Description**
1	Community supports the activity or community is unconcerned by the activity
2	Community is unconcerned but could easily become so
3	Some community concern
4	Serious community concern
5	Public outcry/lawsuits

These general considerations should be taken into account when determining the community concern score:

- Lawsuits
- Obstruction efforts
- Number and scope of community complaints
- Negative/positive press coverage
- Citizen-generated Congressional or regulator interest
- Level of constructive interaction with the community

APPENDIX F

Aspect Criteria Definition – Potential Mission Degradation

Appendix F

Aspect Criteria Definition – Potential Mission Degradation

Mission Potential Degradation

Evaluate the potential that the impact of a particular aspect will degrade the ability of the Garrison to perform its mission.

In scoring the potential for mission degradation, the Garrison ensures the EMS remains both, environmentally and mission focused.

In general, mission restrictions can be:

- **Training Area Restrictions** - Range/training lands "off-limits" to training activities.
- **Activity Restrictions** - Flying, driving, smoke/chaff use, etc., off limits due to environmental restrictions.
- **Intensity Restrictions** - Number of times an activity may be repeated is restricted due to environmental restrictions.
- **Duration Restrictions** - Environmental restrictions have limited how often an activity may be repeated.
- **Permanent Deactivation of the Training Area** - Range or training area removed from active use due to environmental issues.
- **Temporary Rehabilitation of the Training Area** - Loss of total range or training area temporarily for the purposes of rehabilitation (UXO, scrap cleanup).
- **Costs** - Diversion of mission dollars to fund mitigation of environmental issues.
- **Personnel** - Diversion of mission personnel hours to mitigate environmental issues.

When evaluating potential mission degradation, consider factors such as how the loss of a permit or a reduction in a permit would affect the mission. For example, how is the Garrison affected if it cannot discharge storm water run-off into a natural waterway? How will the mission be affected if a Memorandum of Agreement (MOA) can no longer be used due to the potential affects on a natural habitat?

The following definition for scoring the potential mission impact was used during the 2004 assessment:

MissionImpact	
Mission Impact Score	**Mission Impact Description**
1	No mission restrictions
2	Minor mission restrictions
3	Moderate mission restrictions
4	Serious mission restrictions
5	Loss of ability to accomplish mission

APPENDIX G

Aspect Criteria Definition – Regulatory Status

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Aspect Criteria Definition – Regulatory Status

Regulatory Status

The USAG Baumholder is dedicated to maintaining compliance with the Final Governing Standards (FGS) for Germany, US DoD/Army specific regulations, and German regulations, as applicable. Therefore, it is imperative that all environmental aspects with regulatory implications are managed through the EMS.

Determine whether a particular environmental aspect falls under the FGS or other applicable regulation and assess the compliance status.

The following scale was used for evaluating the regulatory status during the 2004 assessment:

Regulatory Status		
Regulatory Compliance Score	**Regulatory Status**	**Score Description**
1	Unregulated Aspect	
2	Regulated Aspect	Currently below regulated thresholds; would likely become regulated if thresholds are reduced or activity increases
3	Regulated Aspect	Currently in compliance with no history of non-compliance
4	Regulated Aspect	Currently in compliance but with a documented history of occasional instances of non-compliance
5	Regulated Aspect	Currently not in compliance or in compliance with a substantial history of instances of non-compliance

Note: Though not all aspects are regulated, you still have to fill in the aspect criterion "regulatory status" (Score = 1 – " unregulated aspect", in this case)!